



Racepak Turbo RPM/Speed Sensor Kit

Part # 800-SS-SPEED

Sensor Thread - Metric 6 x .5 pitch

We recommend that this product be installed by a qualified automotive technician. If you have any doubts as to your ability to install this product, consult with a local automotive repair company. Please be sure to carefully read all of the attached instructions prior to starting the installation process. Prior to the installation, be sure that the vehicle is parked on a level surface and the engine is cool. Engine fluids and components can be extremely hot following normal vehicle operation. Avoid direct contact of engine fluids or components with your skin which may cause personal injury.

Vehicle Modification Notice

Any modifications to your car are **AT YOUR OWN RISK**. You should consult the owner's manual and service manual. You should also contact your car's manufacturer to determine what effects modifications may have on your safety, warranty, performance, etc. Please also contact your local authorities to determine whether your intended modifications will make your car illegal to drive on public roads. A vehicle modified by the use of competition parts may not meet the legal requirement for use on public roads. It is your responsibility to comply with federal, state, and local laws prior to driving your vehicle on public roads.

PRECAUTIONS

Observe all safety precautions and warnings contained in the installation instructions. Wear eye and ear protection and appropriate protective clothing.

When working under or around the vehicle support it securely with jack stands. Use only the proper tools. Exercise extreme caution when working with flammable, corrosive, and hazardous liquids and materials.

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Installation Instructions

1. Remove the compressor housing from your turbocharger. This may necessitate removing the turbo from the vehicle, if it is already installed. Typically the compressor housing is attached to the turbo using a v-band clamp or bolted clamps.

2. Remove all bolts, clamps, and the wastegate actuator – whatever is necessary to separate the compressor housing from the turbo (see fig. 1). Do not loosen the wastegate rod end or lock nut, and do not adjust the actuator; simply unbolt its bracket from the compressor housing.

3. Take your compressor housing to a qualified machine shop. Make sure the machinist is capable of meeting tight area tolerances before agreeing to pay for the work. You may need to contact the manufacturer of the turbo for the recommended location to install the sensor.



Fig 1

Sensor Thread is Metric 6 x .5 pitch

NOTE: The sensor hole should be drilled at an angle, placing the sensor near the base of the wheel below the level of the splitter blades, in order to accurately measure the speed.

4. Once the housing is machined, Test fit the speed sensor. If the lock nut is not accessible by wrench once installed, apply a threadlocking compound that will cure slowly enough to allow adjustment and final tightening. Install the speed sensor loosely in the housing – do not tighten the lock nut yet. If your housing has a ported shroud and the machined hole has broken through to the inside, coat the outside of the sensor with RTV or similar sealant to prevent an air leak past the spacer.

IMPORTANT: Make sure the **tip** of the sensor is approximately flush with the inside contour of the housing. (see figure 2).

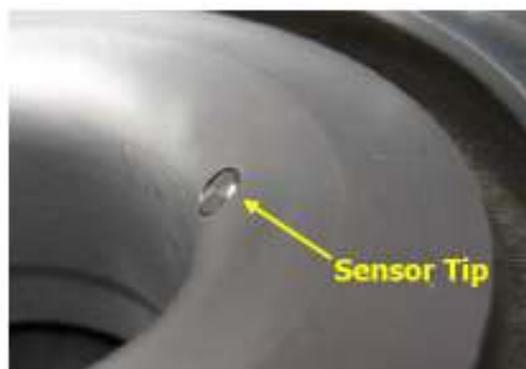


Fig 2

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Installation Instructions (cont)

5. Count the number of blades on your compressor wheel, including small (splitter) blades. Record this number below; you will need it later (see figure 3).
Number of Compressor Wheel Blades: _____

6. Install the housing on the turbocharger with its bolts and clamps. Make sure housing orientation is correct. Reinstall the wastegate actuator with bracket. Tighten and torque the clamping bolts, according to manufacturers specs "Comp. Housing Clamp Bolt Torque" and "Clamp Bolt Thread Type" on the layout for your turbocharger.

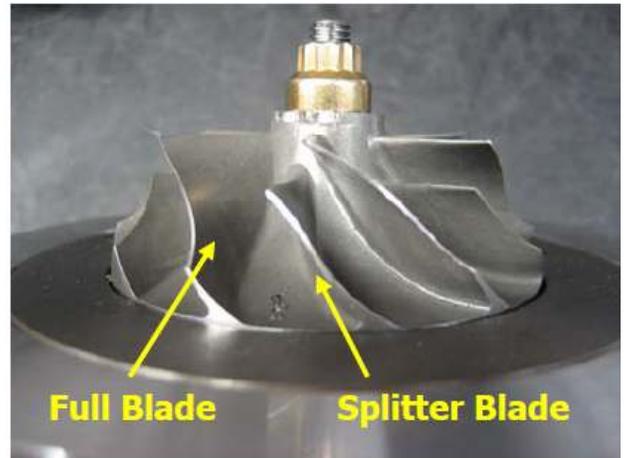


Fig 3

7. Setting the sensor depth: ensure there is sufficient space to turn the compressor wheel by hand. Slowly turn the sensor clockwise, while simultaneously spinning the wheel very slowly. Turn the sensor inwards, just until the tip contacts the edge of a compressor wheel blade. Be extremely careful not to jam the wheel into the sensor – the blades or sensor could be damaged. You should be able to feel a SLIGHT resistance and noise while gently turning the wheel as it contacts the sensor. Then turn the sensor back counterclockwise, approximately **1.6** full turns. This sets the sensor depth correctly. The nominal distance from the blade edge is 0.8mm. The sensor thread pitch is 0.5mm/thread ($0.5\text{mm}/\text{thread} \times 1.6 \text{ threads} = 0.8\text{mm}$).

8. Tighten the speed sensor lock nut firmly with a 10mm wrench. If there is not enough clearance to use a wrench, use needle-nose or similar pliers in conjunction with threadlocking compound to tighten the nut as securely as possible.

9. If the turbocharger was removed from the vehicle, re-install it now.

Sensor installation complete

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